Comment on Dotis et al. ''Central nervous system aspergillosis in children: a systematic review of reported cases''

Comparing our post-mortems of central nervous system (CNS) aspergillosis in childhood with the data recently reviewed by Dotis et al.,[1] we noticed some points that may be worth mentioning from the neuropathological point of view.

The authors emphasize that CNS aspergillosis is a rare condition with the majority of cases being diagnosed only post-mortem. Our own data are in line with these observations. Out of 129 post-mortem investigations only three cases with CNS aspergillosis were seen.

We observed all cases of mycoses in the context of a severe underlying disease compromising the immune system or with medical immunosuppression (Table 1).[2] All patients suffered from additional infections or were suspected to have other infections, e.g., cytomegalovirus (CMV) and herpes simplex virus (HSV).

The diagnosis of multiple infections in severely diseased patients may be difficult because the symptoms of the different disorders may overlap, be the same, or mask each other.[3,4] As a result, diagnosis may be delayed or wrong, resulting in late or inadequate treatment.

Considering the reasons for increased survival found by Dotis et al. in cases with CNS aspergillosis after 1990, these may in part also be explained by improvements in the treatment of the underlying diseases, the management of additional infections, and improved intensive care facilities.

Cerebral aspergillosis usually develops following hematogenous spread of the pathogen from its port of entry — mainly the lungs. The classical neuropathological picture is that of a focal hemorrhagic encephalitis (and basal meningitis) presenting as granuloma-abscesses, necrotizing arteritis, and septic infarcts with extensive hemorrhage.[4] Bleeding may be aggravated by disturbances in blood coagulation as in leukemic patients.[5] This may lead to an acute life-threatening rise in intracranial pressure as in the 16-year-old boy in our cohort who died from gross intracerebral hemorrhage.

The cause of death gives important information about the interaction and significance of different disorders in a complex illness and thus — from the pathological point of view — would have been a valuable additional parameter to be included in the review by Dotis et al.

Table 1 Post-mortem cases of CNS aspergillosis in childhood[a]

Age (years)	Gender	Underlying disease	Additional infection(s)	Neuropathological findings
2	M	Liver transplantation	CMV infection	Aspergillus encephalitis
7	M	T-cell leukemia	None (CMV suspected)	Necrotizing multi-focal Aspergillus encephalitis
16	M	High-risk T-ALL, bone-marrow transplantation	CMV pneumonia, oral HSV infection	Gross intracerebral hemorrhagic, mycotic encephalitis

M, male; CMV, cytomegalovirus; HSV, herpes simplex virus; T-ALL, T-cell acute lymphoblastic leukemia.
[a] Out of 129 post mortems investigated between 1990 and 2006; Institute of Neuropathology, Hamburg, Germany.

Conflict of interest: No conflict of interest to declare.

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Christian Hagel*
Institute of Neuropathology, University Medical Center Hamburg-Eppendorf, Martinistr. 52, D-20246 Hamburg, Germany

Christos P. Panteliadis
Aristotle University of Thessaloniki, Thessaloniki, Greece

*Corresponding author. Tel.: +49 40 428032223; fax: +49 40 428034929

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